Preparing for uncertain careers: How youth deal with growing occupational uncertainties before the education-to-work transition

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DOI: https://doi.org/10.1016/j.jvb.2016.08.002

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Abstract

Recent changes in labor market and working conditions have rendered youth's education-to-work transitions and career prospects more uncertain. This study investigated how youth, while still in education or training, deal with perceived growing occupational uncertainties in terms of goal engagement (i.e., investing active effort in goal pursuit; surmounting obstacles) and goal disengagement (i.e., distancing from unattainable goals; protecting the self against failure experiences). Analyses with two closely matched samples of youth aged 16–25 years from Germany (N = 529) and Poland (N = 530) revealed high levels of goal engagement and a clear preference of engagement over disengagement. Whereas levels of engagement were comparable across countries, disengagement was considerably higher in Polish youth. Regarding the sources of individual differences in engagement and disengagement, sociodemographic factors had very limited effects in both countries. Compared to sociodemographic factors, the level of perceived growing occupational uncertainties, and especially youth's primary and secondary appraisals thereof, were more strongly and consistently associated with engagement and disengagement, especially in Germany, pointing to the prominence of perceptions and appraisals in shaping youth's responses to growing occupational uncertainties. We offer cultural and economic explanations for these findings and discuss implications for interventions aimed at fostering youth's engagement in preparing for their future careers under today's uncertain conditions.

Keywords: youth; transition; vocational development; globalization; employment uncertainty; coping;

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Preparing for an occupation and establishing a career rank among the key developmental tasks of adolescence and young adulthood (Havighurst, 1948; Schoon & Silbereisen, 2009). In the wake of globalization, however, the flexibilization and polarization of labor markets have infused both the initial transition from education to work and early career development with considerable uncertainty (Blossfeld, Klijzing, Mills, & Kurz, 2005; Heinz, 2009; Schoon, 2007). Compared with the relatively secure and predictable working conditions youth in most industrialized nations enjoyed up to the 1980s, the current cohorts of labor market entrants face a labor market characterized, among other things, by a mounting prevalence of precarious employment (e.g., involuntary fixed-term or part-time contracts, employment below one's qualifications) and spells of unemployment (Blossfeld et al., 2005; Kalleberg, 2009).

As a result of these major transformations, many young people experience an increase in perceived occupational uncertainties and demands (Tomasik & Silbereisen, 2009). For youth at the transition to work life, such growing occupational uncertainties present a formidable regulatory challenge that demands their personal *agency*—that is, the "capacity to formulate and pursue life plans" (Shanahan & Hood, 2000, p. 123) and to proactively shape their own development (Heckhausen, 2010; Heinz, 2009). Hence, important questions arise about youth's agency in preparing for their increasingly uncertain careers: What strategies do they use in order to deal with growing occupational uncertainties—do they actively engage with them, or do they disengage and withdraw from career goals? Moreover, what are the sociodemographic and psychological factors (based on perceptions and appraisals) that determine these behavioral responses? Answering these questions may offer a better understanding of individual differences in adapting to a changing world of work, and in the success of the education-to-work transition

more specifically (Schoon & Silbereisen, 2009). Moreover, it could help in identifying targets for interventions.

Here we draw on two parallel studies from Germany and Poland to cast light on these questions. We investigate how youth who are still in education and at the brink of working life deal with perceived growing occupational uncertainties in terms of goal engagement (i.e., investing active effort in goal pursuit; surmounting obstacles) and goal disengagement (i.e., distancing from unattainable goals; protecting the self against failure experiences; Heckhausen, Wrosch, & Schulz, 2010). Our research builds on previous analyses among adults from Germany and Poland who had finished their education or vocational training and were already active on the labor market, henceforth "post-transition adults" (Tomasik, Silbereisen, Lechner, & Wasilewski, 2013; Tomasik, Silbereisen, & Pinquart, 2010). Our research strategy is to replicate and extend these analyses, using essentially the same set of variables, in pre-transition youth from the same countries, a group this previous research has excluded.

Growing Occupational Uncertainties as a Threat to Career Development

Pre-transition youth differ from post-transition adults in that their perceptions of working life are not yet based on their own employment experiences but largely shaped by information from media, educational institutions, or parents and older peers. How, then, may the recent changes in labor market and working conditions affect youth even before the transition to working life? To conceptualize this linkage, we draw on a framework put forth by Silbereisen and colleagues (Pinquart & Silbereisen, 2004). This framework views perceived changes in personal life circumstances—in particular the experience of growing uncertainties—as the psychologically meaningful individual-level manifestation of macro-contextual changes. For example, concerns about future unemployment, which are a major driver of future-related stress among youth (Gelhaar et al., 2007), are a manifestation of rising unemployment rates. Assessing

individually perceived uncertainties does justice to the fact that macro-contextual changes do not affect youth uniformly, but differently according to a range of sociodemographic and contextual factors such as age, gender, education, or the makeup of labor market institutions (Blossfeld et al., 2005; Tomasik & Silbereisen, 2009).

Because growing occupational uncertainties threaten the mastery of career-related developmental tasks, they require youth to react, setting in motion a chain of individual regulatory responses (Silbereisen, Pinquart, & Tomasik, 2010). Within the structural boundaries set by institutional arrangements (e.g., the school system, labor market, or welfare regime), youth co-shape their development by setting and pursuing goals and adjusting them to changing opportunities and constraints (Heckhausen et al., 2010; Heinz, 2009; Shanahan & Hood, 2000).

What forms does such agency take? In this regard, the motivational theory of lifespan development (MTD; Heckhausen et al., 2010) provides a powerful framework. MTD champions the role of individual agency in shaping the life course (including in vocational development) while emphasizing the importance of changing biological (e.g., brain maturation and associated increases in abstract reasoning during adolescence) and socioecological opportunities and constraints (including globalization-related labor market uncertainties) for the pursuit of developmental goals (such as transitioning from education to work; Heckhausen et al., 2010; Heckhausen, 2010). Akin to other models of developmental regulation (Haase, Heckhausen, & Wrosch, 2013), MTD distinguishes two principal types of control strategies that people can employ in the pursuit of longer-term developmental goals, a distinction that guides our present study. *Goal engagement* strategies aim at changing stressors in order to master a given developmental goal (e.g., by investing time and effort or recruiting external support when hindrances occur). To illustrate, youth confronted with growing occupational uncertainties may choose to put extra effort into school work in order to increase their chances of getting an

apprenticeship, or they may consult a counselor to help them construct realistic career goals. *Goal disengagement* strategies, in turn, aim at protecting one's self-esteem and motivational resources when obstacles hinder goal attainment (e.g., through self-serving causal attributions), as well as at temporary or final distancing from unattainable goals (e.g., by devaluing the goal). For example, youth confronted with growing occupational uncertainties may find some solace in comparing themselves with worse-off others, or they may downgrade their career aspirations. Although MTD is a more general theory of life span development, this conceptualization of control strategies vis-à-vis growing occupational uncertainty resembles the definition of *adapting behaviors*, i.e., preparatory behaviors such as career exploration that respond to changing conditions for making a career, as conceived in the more specific literature on career adaptability (Savickas, 2013; see also Hirschi, Herrmann, & Keller, 2015). Goal engagement in relation to occupational uncertainty also has some overlap with the concept of *occupational engagement* among students (Krieshok, Black, & McKay, 2009), which refers to behaviors that youth can use in preparing for their transition to the labor market, such as volunteering in an area they like or focusing on engagement in a school subject they prefer. An important communality of these accounts also lies in the idea that "adolescents start working on their careers long before they engage in actual work behaviors" (Negru-Subtirica & Pop, 2016, p. 163).

According to MTD, goal engagement and disengagement strategies operate in concert, and both are vital for adaptive development (Haase et al., 2013; Heckhausen et al., 2010). Yet their consequences may differ. This is very evident in the case of vocational development. Because career-related developmental tasks and goals assume a high priority for most people in industrialized societies, these goals cannot be easily relinquished, and sustained engagement is required for their mastery (Dietrich, Parker, & Salmela-Aro, 2012). Indeed, plenty of evidence links goal engagement in the work and educational domain to favorable career and transition

outcomes. For example, higher engagement predicted higher chances of finding a job as well as lower risks of job loss and income losses in regions with high unemployment rates (Körner, Lechner, Pavlova, & Silbereisen, 2015), greater chances of obtaining an apprenticeship and higher well-being in German students (Haase, Heckhausen, & Köller, 2008), more hours of gainful employment among US high school graduates (Shane, Heckhausen, Lessard, Chen, & Greenberger, 2012), and higher educational achievement in US university students (Hamm et al., 2013). Only under objectively deprived economic conditions can disengagement yield superior outcomes than engagement in terms of protecting subjective well-being (Tomasik & Silbereisen, 2012), albeit not in terms of objective career success (Körner et al., 2015). In sum, this evidence suggests that how youth deal with growing occupational uncertainties in terms of goal engagement and disengagement may affect both how they *feel* and how they *fare*.

Sources of Individual Differences in Dealing with Growing Occupational Uncertainties

The power of goal engagement and disengagement in shaping career outcomes and well-being directs attention to individual differences in the usage of these strategies. Based on evolutionary considerations and extensive empirical evidence, MTD posits that humans generally exhibit a preference for primary control, such as goal engagement (i.e., primacy of primary control; Heckhausen et al., 2010). Two recent studies have indeed found this preference in German and Polish post-transition adults specifically in dealing with perceived growing occupational uncertainties (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010).

Still, young people's strategies for dealing with such challenges can vary widely (Gelhaar et al., 2007; Heinz, 2009). The aforementioned two studies (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010) have revealed several sources of individual differences in goal engagement and disengagement vis-à-vis growing occupational uncertainties in post-transition adults. First, people who perceived more growing occupational uncertainties showed higher

engagement and disengagement, consistent with the idea that higher levels of burden prompt higher coping efforts (Lazarus & Folkman, 1987). Second, control strategies varied along the lines of sociodemographic factors. Females showed higher engagement and lower disengagement than males, which Tomasik et al. (2013) argued may reflect the greater demands females face in juggling career and family during the demographically dense period of young adulthood (see Moen & Han, 2001, for a gender perspective on the work–family interface). Respondents who were single showed lower engagement and higher disengagement than those in a steady relationship such as marriage; Tomasik et al. (2013) interpreted this as reflecting singles' lack of support from a romantic partner. While this view would align with relational theories of work and careers highlighting the role of emotional and instrumental support from close ones (Blustein, 2011), an alternative interpretation is that those in a steady relationship, particularly those with children, perceive stronger pressure to engage with, and cannot easily afford to disengage from, work-related issues because of their role obligations as family provider. Higher age corresponded to lower engagement and disengagement in Poland (albeit less so in Germany), which the authors attributed to seniority advantages in employment security that accrue with age (Hofäcker & Blossfeld, 2011). Moreover, respondents from East Germany reported higher engagement and lower disengagement, a finding the researchers attributed to continuing regional economic disparities, with the more precarious labor market in East Germany demanding higher engagement (Tomasik et al., 2013, did not investigate regional differences in engagement and disengagement in Poland, although such disparities may exist there as well; cf. Wasilewski, 2015).

Sociodemographic differences in control strategy usage were small, however. Instead, primary and secondary appraisals (control beliefs) emerged as the third and strongest source of individual differences in control strategies, in line with theoretical accounts championing their

role for strategy choice (Lazarus & Folkman, 1987; Skinner, 1996). People who appraised current social and economic changes more as a challenge, rather than as a threat, reported higher engagement and, in Germany but not Poland, lower disengagement. In addition, those who held higher control beliefs showed higher engagement in both countries. In sum, the two studies showed that post-transition adults, on average, deal rather actively with growing occupational uncertainties, but that there is variation in control strategies that can be traced back to the level of perceived uncertainties, sociodemographic factors, and especially to appraisals.

An important question this research with its exclusive focus on post-transition adults has left unanswered is whether these conclusions generalize to pre-transition youth, for whom growing occupational uncertainties are a future-related concern. Given their relative inexperience with working life, do youth show the same preference for goal engagement over disengagement in dealing with perceived growing occupational uncertainties as do post-transition adults? Furthermore, do the sources of individual differences in control strategies operate alike in both groups? This seems especially relevant in view of the fact that the spread of flexible and insecure work arrangements in the wake of globalization disproportionately affects young labor market entrants who are unprotected by seniority or experience (Blossfeld et al., 2005; Hofäcker & Blossfeld, 2011). This should render personal agency during this critical stage of life even more crucial in determining whether young people master the transition from education to work and career development (Heckhausen, 2010). Our study, therefore, addresses these questions.

Aims and Hypotheses of the Present Study

Our research strategy is twofold. First, taking the two previous studies on post-transition adults' ways of dealing with perceived growing occupational uncertainty (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010) as a starting point, we investigate whether the findings regarding control strategy usage and sources of individual differences therein generalize to pre-

transition youth—which these studies did not investigate—using essentially the same set of variables. Second, adopting a cross-nationally comparative perspective, we compare German with Polish pre-transition youth in order to establish whether the pattern of cross-national similarities and differences resembles the one found in post-transition adults.

We test four hypotheses. Hypothesis 1 concerns mean levels of goal engagement and disengagement in dealing with growing occupational uncertainties. It predicts that youth prefer engagement over disengagement, as proposed by MTD (Heckhausen et al., 2010). Our further hypotheses concern the sources of individual differences in control strategies. Regarding sociodemographic factors, Hypothesis 2 predicts that females (2a), those in a steady relationship as opposed to singles (2b), and those living in economically disadvantaged regions of East Germany and East Poland (2c) show higher goal engagement and lower disengagement. Given the restricted age range of the sample, we do not expect any age effects but control for age for the sake of comparability with the previous studies. Because higher education partly protects against globalization-related occupational uncertainties (Blossfeld et al., 2005; Tomasik & Silbereisen, 2009), we also control for educational track, but we do not expect pronounced differences given the high centrality of work and careers for all educational strata. Hypothesis 3 predicts that primary appraisals of growing occupational uncertainties as a challenge, rather than a threat, correspond to higher engagement and lower disengagement (3a); and that higher control beliefs (i.e., secondary appraisal) are related to higher goal engagement (3b) but unrelated to goal disengagement. Finally, Hypothesis 4 states that a higher level of perceived growing occupational uncertainties is related to both higher engagement and higher disengagement.

We tested these hypotheses in parallel samples of youth from Germany (2005/2006) and Poland (2009). These neighboring countries are both highly industrialized members of the European Union; Poland and East Germany (but not West Germany) were under socialist rule

until 1990, followed by an economic and political transformation process entailing often considerable social costs among the members of our present respondents' parent generation. In both countries, young labor market entrants are facing similar challenges related to the flexibilization and polarization of the labor market which disproportionately affect young labor market entrants and particularly those with lower education (Golinowska, 2005; Hofäcker & Blossfeld, 2011; see also Lechner, 2014). Yet, there are persistent economic disparities between them, in particular Germany's higher economic prosperity (gross-domestic product per capita in 2009: 35,638 US$ vs. 18,796 US$ in Poland) and higher welfare state provisions (total social expenditure per capita in 2009: 10,013 US$ vs. 4,070 US$ in Poland). Moreover, despite decreases in the mid-2000s, youth unemployment (under 25 years) was about twice as high in Poland as in Germany, with rates of 11.2% in Germany but 20.6% in Poland (EUROSTAT, 2014). Despite these disparities, we expected the pattern of youth's strategies for dealing with occupational uncertainty to be similar across countries, given the universally high centrality of the education-to-work transition as a developmental task in this life phase (Dietrich et al., 2012).

Method

Data and Sample Selection

The German sample came from the *Jena Study on Social Change and Human Development* (Silbereisen et al., 2010). From fall 2005 to spring 2006, a professional survey institute conducted standardized computer-assisted personal interviews with 2,863 respondents aged 16 to 43 years from two post-socialist, economically less prosperous, East German (Thuringia, Mecklenburg-Pomerania) and two economically more prosperous West German federal states (Schleswig-Holstein, Baden-Wurttemberg). To obtain a representative sample, a multi-stage sampling design was applied (for details, see Reitzle, 2008). Within each state, a roughly equal number (900 to 1000) of addresses of private households were randomly drawn

from an existing master sample representative of the German population aged 14 and older. These addresses served as sampling points for a random route procedure (sometimes referred to as “random walk” procedure). According to this random route procedure, interviewers contacted a fixed number of target persons eligible for study participation starting from each sampling point (i.e., address), selecting respondentsaccording a set of rules specifying where to walk from the starting address and based on which criteria to select respondents. The Polish sample came from the project *Sociological and Psychological Determinants of Coping with Rapid Social Changes* (Wasilewski, 2015; see also Lechner, 2014), a study with sampling procedures and assessment instrument closely matched to its German predecessor. In spring 2009, a professional survey institute conducted standardized computer-assisted interviews with 3,078 respondents aged 16 to 46 years from two economically more prosperous West Polish (Pomerania, Lower Silesia), and two less prosperous East Polish (Lublin, Subcarpathia) Polish Voivodeships (i.e., provinces; highest-level administrative subdivisions, similar to German federal states in area and population size). The addresses of 600 target individuals, stratified by age, gender, and community size, were randomly drawn from a population register. These addresses served as starting points for a random route procedure akin to the German study. Both samples represented the population from the respective age group and geographic regions well in terms of basic sociodemographic characteristics such as age, gender, education, employment status, marital status, and household size (see Reitzle, 2008, pp. 52–53, for Germany; and Lechner, 2014, pp. 39–41, for Poland).

For the present analyses, we selected all youth aged 16 to 25 years who were still in full-time education (i.e., attending school, vocational training, or university) and hence shortly before the transition from education to work. As Table 1 shows, this resulted in two equally sized samples of youth (total $N = 1{,}059$) with a similar sociodemographic composition, although in

Poland respondents from East Poland were slightly overrepresented, and although more Polish than German youth were currently in a steady partnership.

Measures

The following measurement instruments were originally devised in German within the scope of a larger research project on coping with social and economic change (Silbereisen et al., 2010). For the Polish replication, native speakers translated all materials to Polish. Independent translators then translated them back to German, and a team of experts familiar with the language and culture of both countries checked the accuracy, clarity, and equivalence of the wording in both languages, and the instruments underwent extensive pretesting in both countries.

Perceived growing occupational uncertainties. Six items measured youth's perceptions of growing occupational uncertainties, the stressors to which the control strategies of goal engagement and disengagement (our focal variable in this study) referred. The items come from a well-validated scale measuring growing occupational uncertainty in post-transition adults (Tomasik & Silbereisen, 2009) that was slightly adapted to fit youth's pre-transition status. The items covered six major labor market trends affecting the majority of youth in Germany and Poland as they prepare for the normative transition to the labor market, derived from an extensive screening of public statistics, labor market research, and qualitative as well as quantitative pretests. These trends included perceived increases in (1) difficulties in career planning, (2) unforeseen circumstances thwarting one's career plans, (3) the risks of having to accept involuntary part-time work or (4) work below one's qualification, (5) the risks of not being able to finish one's education, and (6) the scarcity of occupational training opportunities. During the interviews, interviewers first read out the following introduction: "We are living in a period of rapid change. Globalization, new technologies, and other developments modify our everyday life in a variety of different ways. Many of these changes have both positive and negative aspects."

Interviewers then prompted respondents to "consider [their] educational or vocational training and what has changed there across the past 5 years" and asked them to rate each item on a scale ranging from 1 (*does not apply at all*) to 7 (*fully applies*). The five-year interval was chosen to provide a temporal frame of reference to anchor respondent's answers that was long enough for significant change to happen yet short enough to keep memory bias within bounds. Following earlier research (Tomasik, Silbereisen, & Pinquart, 2010; Tomasik & Silbereisen, 2009) we created a cumulative index by counting the number of highly endorsed (6 or 7 on the 7-point scale) occupational uncertainties. As a robustness check, we also computed all subsequent analyses using a mean score; this yielded identical conclusions in all analyses. Age was uncorrelated with the number of perceived uncertainties in Germany, $r = -.04$, $p = .41$, and only weakly correlated in Poland, $r = .18$, $p < .001$, suggesting that the youngest respondents in our sample were not systematically less aware of the labor market changes than older ones. Table A1 in the Appendix shows the exact item wording, along with the share of youth in Germany and Poland who highly endorsed each item. The average load of perceived uncertainties was $M = 1.81$ ($SD = 1.84$) in Germany and $M = 1.29$ ($SD = 1.78$) in Poland. Previous research using the same data (see Silbereisen, Pinquart, & Tomasik, 2010) demonstrates that occupational uncertainties measured with this scale show theoretically meaningful associations with sociodemographic factors (e.g., they are higher among the unemployed and among the lower-educated; Tomasik & Silbereisen, 2009); and predict outcomes such as life satisfaction and job satisfaction (Tomasik, Silbereisen, & Heckhausen, 2010; Tomasik & Silbereisen, 2012; also see Silbereisen, Pinquart, & Tomasik, 2010).

Control strategies. Directly after rating the items on occupational uncertainties, youth answered an instrument assessing their strategies of dealing these uncertainties, introduced by the following statement: "People handle such changes in very different ways. With the help of the

following list please keep your present situation in mind and consider what you do in order to deal with it." Based on MTD (Heckhausen et al., 2010), we measured four generic control strategies that youth may use to deal with perceived growing occupational uncertainties as they pursue their vocational goals. Two of these control strategies represent *goal engagement*: Selective primary control (SPC) refers to the active investment of time and effort (e.g., "I am prepared to make a major effort in order to find a good solution."). Compensatory primary control (CPC) refers to the mobilization of external support when obstacles or drawbacks occur (e.g., "If I get stuck, I take advantage of all of the help that I can get to make progress."). The two other strategies represent *goal disengagement* (i.e., compensatory secondary control): Self-protection (CSCpro), refers to self-protective strategies, such as self-serving attributions, in case of failure (e.g., "If I can't handle these changes, I search for reasons not to have to blame myself."). Goal-distancing (CSCdis), represents final distancing from unattainable goals (e.g., "If I can't handle these changes at all, I don't concern myself with them any longer."). We measured each of these four strategies by three items that had satisfactory internal consistencies in both Germany ($.78 < \alpha < .83$) and Poland ($.69 < \alpha < .71$). Respondents rated all items on 7-point scale (1 = *does not apply*; 7 = *fully applies*). Previous studies in post-transition adults attest to the construct and criterion validity of this instrument, showing that the control strategies conform to the hypothesized factor structure in Germany and Poland (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010), have theoretically meaningful relationships to socio-demographic and psychological predictors (e.g., employment status and appraisals; Tomasik et al., 2013, 2010), and predict both subjective (e.g., job satisfaction; Tomasik et al., 2010, Tomasik & Silbereisen, 2012) and objective (e.g., income, job loss; Körner et al., 2015) career-related outcomes. Table A2 in the Appendix provides a full item list.

Appraisals. Two items then assessed youth's primary and secondary appraisals. The concept of appraisal figures very prominently in the literature on coping and developmental regulation, including on dealing with growing occupational uncertainty (Tomasik, Silbereisen, & Pinquart, 2010). *Primary appraisal* comprises cognitive judgements as to the significance or meaning of a stressor (Lazarus & Folkman, 1987). It was assessed by a 7-point bipolar item that was introduced to respondents as "viewpoints which people may hold towards these changes." Respondents then indicated whether they viewed these changes more as a "threat" or more as a "challenge" (1 = *threat*; 7 = *challenge*). Higher scores on the item thus indicate (more beneficial) appraisals as a challenge. Youth on average rated the changes more as a challenge in Germany (M = 5.25, SD = 1.52) and, to a lesser extent, in Poland (M = 4.34, SD = 1.71).

Secondary appraisal comprises judgements of one's resources to deal with the stressor variously termed "control" or "efficacy" beliefs (Skinner, 1996). These control beliefs were assessed via an item asking respondents how well, when "thinking back on all the changes which have taken place over the past 5 years," they "feel prepared in facing these changes" on a 7-point-scale (1 = *very badly*; 7 = *very well*). Youth in both countries held rather high control beliefs (Germany: M = 5.10, SD = 1.11; Poland: M = 4.94, SD = 1.18).

Sociodemographic factors. In terms of potential sociodemographic sources of individual differences in dealing with occupational uncertainty, we coded age in years, gender (0 = *male*; 1 = *female*); whether respondents were currently in any form of steady romantic relationship (0 = *no*, 1 = *yes*); and whether their place of residence was in an East or West region (i.e., German federal statePolish Voivodeship; 0 = *West*; 1 = *East*). Although East–West differences in economic prosperity and labor market situation are more pronounced in Germany, there is also an East-West differential in economic development in Poland dating back to the repeated partitions of the country (cf. Wasilewski, 2015). Additionally, given the marked differences in the

educational systems and the limited sample size, we used a parsimonious binary variable indicating whether respondents were currently on a vocational-oriented secondary school track (i.e., German *Hauptschule*, *Realschule*, or *Berufsschule*; Polish *Zasadnicza szkoła zawodowa*, *Lyzecum profilowany techniczny / zawodowy;* coded 1) or in general secondary or tertiary education (i.e., German *Gymnasium, Fachhochschule*, or *Universität*; Polish *Liceum ogólnokształcące*, *Szkoła policealna*, *Szkoła wyższa,* or *Uniwersytet*, coded 0). In Poland, 51 respondents were still attending the *Gymnazjum*, where there is no tracking (up to 9th grade); we assigned these respondents a missing value. Various variants of coding led to similar conclusions.

Data Analyses

We used structural equation modeling (SEM) in Mplus 7.3 to test our hypotheses. SEM entailed two analytical benefits in the present context. First, it allowed us to test the measurement equivalence of the control strategy scales across countries, which is the key prerequisite for valid cross-national comparisons of means and regression coefficients. Second, modeling the control strategies as latent variables enabled us to take measurement errors into account, yielding estimates of regression coefficients that are unbiased by measurement error. In the first step, we tested a multi-group latent measurement model for the control strategies to ensure that the same four-factor structure applied to both counties. We used this model to compare the mean-level structure of goal engagement and disengagement within and across countries. The latter requires scalar invariance, i.e., factor loadings and intercepts held equal across countries (Chen, 2007). In the second step, we simultaneously regressed the four control strategies on the potential sources of individual differences in these strategies. To compare regression coefficients across countries, we relied on 95% confidence intervals and Wald z-tests. In both modelling steps, we used the robust maximum likelihood estimator (MLR) in Mplus, which corrects for potential non-normality in the data. To handle any missing data, we used full information maximum likelihood

estimation (FIML). In Germany, there were very few missing data, ranging from 0% to 6.6% per variable. In Poland, there were no missing data on any of the variables except for educational track, where, as noted earlier, we coded those still in primary education as missing (10.6%).

Results

Measurement Model for the Control Strategies

As to the measurement equivalence of the control strategies across countries, a scalar invariance model showed reasonable fit to the data, $\chi^2(112) = 214.54$, $p < .001$, CFI = .959, TLI = .952, RMSEA = .042, SRMR = .041. Yet, the differences to a metric model (i.e., factor loadings but not intercepts equal across countries) were ΔCFI = –.015 and ΔRMSEA = .007, which is partly above the thresholds indicating non-invariance (ΔCFI ≥ –.010; RMSEA ≥ .015; Chen, 2007, p. 501). As suggested by modification indices, we hence freed the intercept of the third SPC item, resulting in further improved model fit, $\chi^2(111) = 185.79$, $p < .001$, CFI = .97, TLI = .964, RMSEA = .036, SRMR = .043) and a smaller and admissible difference to the metric model (ΔCFI = –.004; ΔRMSEA = .001). This partial scalar invariance model still allows for valid mean-level comparisons across countries. Sensitivity analyses demonstrated that using the full scalar or partial scalar invariance model yielded the same substantive conclusions in the subsequent analyses. Further sensitivity analyses comparing the measurement model across younger (younger than 18 years) and older respondents (18 to 25 years) in both countries showed that the instrument followed the same structure among younger respondents, ensuring that the constructs were equally meaningful even to the youngest respondents in the samples (details on request from the first author). Thus, results supported the cross-national equivalence of the instrument. Figure 1 provides standardized factor loadings and factor intercorrelations.

Mean Levels of Goal Engagement and Disengagement in Germany and Poland

What strategies do youth use to deal with growing occupational uncertainties? Figure 2 shows the mean levels of the four control strategies in Germany and Poland. In line with Hypothesis 1, youth in both countries reported higher goal engagement (SPC, CPC) than goal disengagement (CSCpro, CSCdis). Levels of goal engagement were comparably high, although Germans showed slightly lower SPC and higher CPC than Poles did, with small to moderate effect sizes (Cohen's $d = 0.21$ for SPC and $d = –0.40$ for CPC). There were, however, quite marked differences in goal disengagement. Polish youth's mean levels of CSCpro and CSCdis were both almost one scale point ($0.82 \leq \Delta M \leq 0.97$) higher than German youth's, and these cross-national differences were large in terms of effect size (Cohen's $d = 0.97$ for CSCpro and $d = 0.82$ for CSCdis). As the reader may already have inferred from the non-overlapping confidence intervals in Figure 2, these cross-national differences in goal disengagement were statistically significant ($p < .001$); this remained true after adjusting for the grand-mean-centered sociodemographic variables (i.e., comparing conditional means), demonstrating that the mean-level differences did not arise from potential differences in sample composition. As a result of Poles' higher levels of disengagement, the hypothesized preference for goal engagement over goal disengagement was especially strong in Germany, with mean differences (ΔM) between each of the two goal engagement and each of the two goal disengagement strategies amounting to more than two scale points ($2.13 \leq \Delta M \leq 2.51$). The preference was accordingly weaker, although still substantial, in Poland ($1.00 \leq \Delta M \leq 1.67$). In sum, Hypothesis 1 that youth show a preference for engagement over disengagement received full support. This preference was stronger in Germany than in Poland because of Pole's higher levels of disengagement (at comparable levels of engagement).

Sources of Individual Differences in Goal Engagement and Disengagement

What are the sources of individual differences in control strategies? As Table 2 shows, in Germany gender and relationship status were unrelated to all four control strategies, contradicting Hypotheses 2a and 2b. Likewise, educational track and age (for which we had no hypotheses) were unrelated to all control strategies. In line with Hypothesis 2c, however, results revealed a clear difference between East and West German youth, with the former showing higher goal engagement and lower goal disengagement (with the exception of CSCpro). The sociodemographic factors alone explained only 2.8% of the variance in SPC, 2.8% of that in CPC, 1.1% in CSCpro, and 3.4% in CSCdis. By comparison, the psychological factors were more consistently related to the control strategies. As predicted by Hypothesis 3a, primary appraisal as a challenge, rather than a threat, related to higher goal engagement and lower disengagement. In addition, in line with Hypothesis 3b, higher control beliefs related to higher goal engagement but were unrelated to goal disengagement. Finally, higher occupational uncertainty was positively related to all four control strategies, as predicted by Hypothesis 3c.

In Poland, as in Germany, sociodemographic predictors were largely unrelated to the control strategies, contradicting our second hypothesis. Only Hypothesis 2a received some support through females' lower levels of CSCdis. As concerns Hypothesis 2c, there were no statistically significant differences in control strategy usage between youth from East as compared with West Poland, although the pattern resembled the one found in Germany, where the East-West differences are stronger (higher goal engagement and lower goal disengagement in the economically less prosperous East). Altogether, the sociodemographic factors explained only 2.6% of the variance in SPC, 1.4% in CPC, 1.6% in CSCpro, and 3.3% in CSCdis. In terms of the psychological factors, appraisal as a challenge corresponded to higher engagement but, different from Germany, not to lower disengagement, supporting Hypothesis 3a only partially. As in Germany, higher control beliefs were related to higher goal engagement but unrelated to

disengagement, in support of Hypothesis 3b. Finally, as predicted by Hypothesis 4, a higher level of perceived occupational uncertainties corresponded to higher usage of all four control strategies (although statistically non-significant for SPC).

As judged by the largely overlapping confidence intervals for most regression coefficients, the pattern of predictive relationships was quite similar across countries, despite a few coefficients reaching statistical significance in one country but not the other. The associations of challenge-threat appraisal with all four control strategies, though, were significantly stronger in Germany than in Poland (SPC: $\chi^2(1) = 7.01$, $p = .008$; CPC: $\chi^2(1) = 5.61$, $p = .002$; CSCpro: $\chi^2(1) = 10.71$, $p = .001$; CSCdis: $\chi^2(1) = 11.55$, $p < .001$). No statistically significant cross-national differences emerged in the predictive power of control beliefs or of perceived occupational uncertainties. Nevertheless, the joint predictive power of all sociodemographic and psychological factors together was roughly two times higher in Germany compared to Poland for all control strategies (see total R^2 in Table 2), and this was entirely due to the psychological factors being more strongly related to the control strategies in Germany.

Discussion

This study asked how youth who are still in education or training prepare for their future careers on labor markets characterized by increasing globalization pressures and uncertainties (Blossfeld et al., 2005; Kalleberg, 2009). To address this question, we investigated levels, as well as sources, of individual differences in goal engagement and disengagement strategies that youth may use to deal with perceived growing occupational uncertainties. How young labor market entrants respond to such uncertainties concerning their imminent entry to working life can be seen as an instance of career adaptability—the "readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted

by the changes in work and work conditions" (Savickas, 1997, p. 254)—and has ramifications for career outcomes and for well-being (e.g., Körner et al., 2015; Tomasik & Silbereisen, 2012).

Our analyses in two parallel samples from Germany and Poland revealed four main findings. First, youth in both countries showed a clear preference for goal engagement over disengagement strategies, supporting MTD's proposition that individuals prefer primary control strategies such as goal engagement (Heckhausen et al., 2010) and replicating results in post-transition adults from the same two countries (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010). With mean levels above 5 on a 7-point scale, goal engagement was remarkably high in both countries, and considerably higher than goal disengagement with means around the scale's midpoint. This suggests that youth deal with growing occupational uncertainties in an engaged, proactive fashion—a conclusion in line with cross-national research on youth's coping with different types of future-related stress, including academic and career-related concerns (Gelhaar et al., 2007; Seiffge-Krenke et al., 2010).

Yet, second, there was a notable cross-national difference in control strategy usage. Whereas levels of engagement were comparable, Polish youth's levels of disengagement were almost a scale point higher than Germans'. We offer two tentative explanations for this finding that follow previous research in attributing cross-national difference to (a) socio-cultural factors, such as norms toward active-approach oriented coping; and (b) economic and institutional factors, such as GDP per capita and youth unemployment rate (Gelhaar et al., 2007; I. Seiffge-Krenke et al., 2012). On the one hand, the difference in disengagement might reflect cultural differences. According to major cross-cultural surveys (Hofstede, 2016), Poland's national culture is characterized by higher *uncertainty avoidance* than Germany's (i.e., Poles perceive novelty and ambiguity as more threatening, on average, than Germans do) and by lower *long-term orientation* (i.e., Poles value traditions and norms more highly than do Germans and tend to

view societal change with more suspicion). This may lead young Poles to more strongly rely on self-protective and distancing strategies vis-à-vis growing occupational uncertainties. On the other hand, the finding may reflect the makeup of labor market and educational institutions. Compared to Germany with its highly regulated pathways to working life (e.g., its dual system of apprenticeship) and lower youth unemployment rates, labor market entry in Poland is less institutionally structured and less standardized (Golinowska, 2005; Hofäcker & Blossfeld, 2011), demanding greater flexibility in career goal pursuit. Thus, Poles' higher levels of goal disengagement may reflect the need for greater self-protection of motivational resources originating from their anticipation of a less smooth transition to work. This would be in line with extant cross-national research reporting higher levels of withdrawal (similar to disengagement) from job-related problems among youth from countries with higher unemployment (Gelhaar et al., 2007). Because the ability to protect one's motivational resources in the face of setbacks and to let go of unattainable goals in order to reengage with more promising ones are core features of adaptive developmental regulation during the education-to-work transition (Dietrich et al., 2012; Heckhausen, 2010), Poles' higher levels of goal disengagement may well be adaptive given the economic and institutional context. Because we were unable to empirically address these tentative explanations with the data at hand, they remain speculative for the moment, and future cross-nationally comparative research is needed to support them.

Third, our analysis of the sources of individual differences in control strategies revealed many cross-national similarities in the patterns of predictive relationship but also a number of differences. Sociodemographic factors were only weakly related to the control strategies in both countries. Notable exceptions comprise the higher engagement and lower disengagement among East German as compared to West German youth (with similar, though statistically non-significant, differences between East and West Polish youth, reflecting Poland's smaller regional

disparities), as well as the lower levels of distancing of Polish females compared to Polish males. These regional differences may reflect East Germany's lower economic prosperity and higher unemployment (Tomasik, Silbereisen, & Pinquart, 2010), and gender difference may reflect females' relatively disadvantaged labor market position (Moen & Han, 2001), which youth anticipate early on. By and large, however, sociodemographic differences were small, replicating the earlier findings in post-transition adults (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010) and resembling earlier studies reporting only very limited effects of sociodemographic factors such as gender, age, and socioeconomic background on youth's strategies in coping with future-related stress (Gelhaar et al., 2007; Seiffge-Krenke et al., 2010).

Fourth, the level of perceived growing occupational uncertainties and especially their primary and secondary appraisals, were more strongly and consistently associated with the control strategies than sociodemographic factors were. This corroborates a classic notion in research on coping and developmental regulation—that subjective perceptions and beliefs are paramount for strategy choice (Lazarus & Folkman, 1987; Skinner, 1996). Here, an interesting twist is that the predictive power of primary appraisals was stronger in Germany than in Poland, especially concerning disengagement. This again parallels earlier findings in post-transition adults (Tomasik et al., 2013; Tomasik, Silbereisen, & Pinquart, 2010). We contend that this difference, too, reflects features of the economic and institutional context. As Tomasik et al. (2013) have speculated, Poland's lower welfare state provisions and economic prosperity may constrain Poles' control strategy choices, leaving less room for primary appraisal to shape these choices. Although an explicit test of this idea remains a task for future research, this interpretation would be in line with the idea that institutional arrangements set the boundaries for personal agency during work transitions (Fouad & Bynner, 2008; Schoon & Silbereisen, 2009).

Our findings have potential implications for interventions aimed at fostering youth's engagement with career goals in the face of growing occupational uncertainties. Specifically, they suggest that appraisals of occupational uncertainties as a challenge that can be met, as well as control beliefs, may be viable targets if the aim is to increase youth's capacity for goal engagement. This may be achieved through various means, such as providing youth with information about labor market developments, assisting them in setting realistic career goals, and deepening their knowledge about effective engagement strategies for dealing with growing occupational uncertainty, all of which can enable mastery experiences. At the same time, practitioners designing such interventions need to bear in mind that futile engagement (e.g., prolonged job search in regions with high unemployment) can waste resources and threaten well-being. Hence, flexibility in disengaging from unattainable career goals in order to engage with more promising ones is ab equally relevant skill (Dietrich et al., 2012; Heckhausen et al., 2010).

Limitations and Directions for Future Research

Future research should address some limitations of our study. First, our data are cross-sectional and correlational, offering only a snapshot of how youth deal with occupational uncertainty and precluding causal interpretation. Given that goal engagement and disengagement typically operate in action cycles (Heckhausen et al., 2010), studies following youth across the transition to working life may yield further insights into the timing and temporal dynamics of goal engagement and disengagement, which some researchers deem critical for a successful transition (Dietrich et al., 2012; Schoon & Silbereisen, 2009).

Second, there are some limitations to the measures used in this study. We assessed youth's ways of dealing with perceived growing occupational uncertainties in terms of generic control strategies, allowing us to subsume a broad range of possible control behaviors under a limited number of factors and resulting in a scale with excellent psychometric properties. Despite

these advantages, this assessment approach provides little insight into the specific control behaviors that youth employ to deal with occupational uncertainties. To illustrate, respondents reporting high goal engagement may do so having in mind their heightened school engagement, their efforts to secure a coveted apprenticeship position, or their search of the Internet for suitable careers. Control behaviors in response to occupational uncertainties might also differ according to the specific goals that youth pursue (e.g., higher school engagement among those aspiring to go to university vs. writing applications among those aiming for an apprenticeship). Future studies assessing control behaviors in such a specific and fine-grained manner would constitute a useful extension of our study, especially with regard to designing interventions. Such studies might also reveal individual differences in the usage of specific control strategies that our study could not detect. A similar limitation concerns the assessment of perceived growing occupational uncertainties in this study. Although measuring the individual-level consequences of macro-level changes in the world of work by asking respondents about perceived changes in personal circumstances has proven fruitful (e.g., Kubicek, Paškvan, & Korunka, 2014; see also Silbereisen), such temporal comparisons depend on the respondent's subjective judgement of change and are unable to determine the specific form and pace of change. Future studies that additionally assess the pace and scope of change (see Kim, 2008, for an example of this assessment strategy) or longitudinal studies using repeated measures of perceived uncertainties would allow for more rigorous examinations of how *changes* perceived uncertainties over longer periods of time relate to *changes* in control strategies, and vice versa.

Future studies should also address potential sources of individual differences in response to growing occupational uncertainties, and in career preparation more broadly, that our study could not address but that previous research and theorizing has highlighted as potentially relevant. This pertains in particular to parental socio-economic status and social capital

(Heckhausen et al., 2010; Hirschi, 2009; Schoon, 2015), supportive relationships with parents, teachers or individuals in the wider community (Blustein, 2011; Hirschi, 2009), and youth's school performance (Negru-Subtirica & Pop, 2016).

Finally, although our two-country design allowed for a built-in replication, one should bear in mind that (a) the samples were gathered in different years, 2005/2006 and 2009; and that (b) both samples still enjoyed relatively favorable economic conditions around the time of data collection. This is especially true in comparison to the current situation in countries like Spain or Greece, where youth unemployment and precarious employment (e.g., temporary employment, involuntary part-time work), have soared since 2008 in the wake of the recent ongoing economic crisis (Scarpetta, Sonnet, & Manfredi, 2010). Youth in these countries, especially those with a higher socioeconomic background, have often responded by postponing the transition to work and prolonging their educational careers, leading to a postponement of other developmental milestones such as independence from parents and family formation (Schoon, 2015); others have dropped out of education but are not active on the labor market either (i.e., those not in education, employment, or training; NEET populations), putting them at risk of a "scarring" effect to their future vocational development (Scarpetta et al., 2010; Schoon, 2015). In this regard, reactions to growing occupational uncertainties in the countries most severely affected by the crisis may differ from the range of responses observed in our present samples. Studies replicating our analyses in countries struck by the ongoing crisis could yield insights into possible period and cohort effects on youth's strategies of dealing with growing occupational uncertainties. Moreover, given well-known cross-cultural variability in youth's coping with future-related stress (Gelhaar et al., 2007), studies investigating youth from non-Western countries could further speak to the generalizability of our findings.

Conclusion

Overall, our study leads to three broader conclusions. First, our findings paint a fairly positive picture of youth's readiness to deal with perceived growing occupational uncertainties in a proactive, problem-oriented fashion. Youth show high agency in dealing with potential difficulties and uncertainties in resolving career-related developmental tasks that they—quite realistically—anticipate. Second, subjective perceptions and appraisals of growing occupational uncertainties, not sociodemographic factors, constitute the primary sources of individual differences in engagement (and, to a lesser extent, disengagement), especially in Germany. Third, these patterns of control strategy usage, as well as individual differences therein, among pre-transition youth are strikingly similar to the pattern reported in previous research in post-transition adults, pointing to the already high centrality of work-related developmental tasks and goals for pre-transition youth. Our findings could contribute to the development of programs aimed at helping youth master the transition to work life by fostering engagement with the challenges that globalization pressure and the ensuing changes in labor market and working conditions entail.

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